

INSTALLATION

To install your new tools, follow these instructions:

- 1) Get into the QuickEditor by going TOOLS-QUICKEDITOR.
- 2) Click TRANSFER.
- 3) Select the second button: "Transfer Analysis Techniques FROM EasyLanguage Archive File (.ELA)".
- 4) Find the floppy disk through BROWSE-DRIVES-A:.
- 5) A list will appear with possible tools to transfer. Select the one you wish to transfer by clicking on it then hitting OK-OK.
- 6) Choose "Transfer All."
- 7) If there are more tools you wish to transfer from the same disk, just repeat these steps.

INDEX OF FUNCTIONS

The following user functions have been included with the Fractal Toolkit:

MA_BZONE(osc,perc,lkbk): Calculates an adaptive buy zone for any oscillator.

osc refers to the oscillator that the calculation will be based upon.

perc is the percentage of the time the oscillator should be below the adaptive buy zone looking back over lkbk bars. A typical setting would be 0.1 (ten percent) or 0.15 (fifteen percent), for example.

lkbk see above.

MA_Fractal(price,depth): Fractal trend indicator.

price refers to the values used to calculate MA_Fractal. The default is the close, but other values such as $(o+h+l+c)/4$ are possible as well.

depth acts as a smoothing factor to tamp down noise. Default is 8, range is 1 to 60.

MA_Fractal_Short(price,depth): Like MA_Fractal but looks for shorter length fractal patterns. The result is a more responsive, but noisier indicator.

price refers to the values used to calculate MA_Fractal. The default is the close, but other values such as $(o+h+l+c)/4$ are possible as well.

depth acts as a smoothing factor to tamp down noise. Default is 8, range is 1 to 60.

MA_RSI(price,length): Calculates RSI using a slightly different method

price refers to the values used to calculate the RSI indicator.

Default is the close, but other values are possible as well.

length refers to the look back period used to calculate the RSI.

Default is 14.

MA_RSIA adap(price,length,degree): Calculates an adaptive version of the RSI indicator.

price refers to the values used to calculate the RSI indicator.

Default is the close, but other values are possible as well.

length refers to the look back period used to calculate the RSI.

Default is 14.

degree will adjust the range of adaptability of the indicator.

Smaller values will result in larger changes, while larger values will result in smaller changes. Default is 10.

MA_SK(length,smooth): Calculates Slow Stochastics using a new method.

length refers to the look back period used to calculate

Stochastics. Default is 14.

smooth is a smoothing factor needed with this new method of calculating Stochastics. Default is 3.

MA_SKAdap(length,smooth,degree): Calculates an adaptive version of Stochastics.

length refers to the look back period used to calculate

Stochastics. Default is 14.

smooth is a smoothing factor needed with this new method of calculating Stochastics. Default is 3.

degree is the same as with MA_RSIAdap.

MA_SZONE(osc,perc,lkbk): Calculates an adaptive sell zone for any oscillator. Inputs are the same as MA_BZONE.

MA_FRACTAL

The Fractal Toolkit is a group of tools based upon our proprietary fractal trend indicator. Tired of the slow and overused indicators like ADX, we began research into trend detection. We discovered that when the market shifts phases from non-trending to trending, there is a subtle but detectable change in the market's fractal structure. This change is what our Fractal indicator is designed to measure.

There are actually two trend indicators that do basically the same thing: MA_Fractal, and MA_Fractal_Short. The only difference between them is that MA_Fractal_Short looks for fractals that are only half as large as the ones in MA_Fractal. The result is a noisier but more responsive indicator. We have found that the basic MA_Fractal works better in most situations, although AI tools such as neural networks also seem to like MA_Fractal_Short. You will have to experiment to see which tool works best for your applications.

Although there are different ways to use the output of MA_Fractal, the simplest method is to treat it like the other trend indicators. High values indicate a trending market while low values indicate a consolidation market. The rate of increase/decrease is also important, and can be used to signal the end or resumption of a current trend. For example, if the market is trending and MA_Fractal flattens out or begins to decline, an indication is being given that the trend has just about run its course. While these divergence signals do not occur at the end of every trend, when they do they can be very powerful signals.

MA_RSIAdap

Aside from using the MA_Fractal to gauge trend strength, another use that it can be put to is to create adaptive indicators. MA_RSIAdap is an adaptive version of the popular RSI indicator. What makes this indicator adaptive is that instead of using an arbitrary look back period for calculating the RSI, it will change look back periods depending on the character of the market. This has the effect of creating a more timely indicator that tracks overbought/oversold conditions more accurately than the original.

An initial look back period(length) is required for this indicator to operate. The default value is 14, which is the most common setting for the non-adaptive RSI. When MA_Fractal indicates a trending market, the length of the RSI will increase by a certain amount determined by the strength of the MA_Fractal reading. Stronger trends will cause larger increases in the look back length, while mild trends will cause only mild increases. Conversely, during trading range markets, the length of the RSI will decrease from the initial setting to track minor peaks and valleys more accurately.

The user has control over how much the RSI look back should vary. This can be accomplished by changing the degree setting. A larger degree will give smaller changes to the look back, while a smaller degree setting will cause the look back to fluctuate more wildly. The formula used to adjust the length is given below:

$$\text{new length} = \text{length} + (\text{FVal}-0.5)*10*(\text{length}/\text{degree})$$

where FVal is the current MA_Fractal value scaled between 0 and 1

Let's plug in some example numbers to demonstrate the interaction between degree and length settings. An initial length of 14 with a degree of 10 will result in a look back range from 7 to 21 depending on trend strength. If we changed degree to be 7 instead of 10, our

new range increases to 4 to 24. A degree of 15 instead of 10 gives us a range from 9 to 19. You will have to experiment a little to find the values that best suit your style of trading.

This is only one way of making RSI adaptive using MA_Fractal. Through experimentation, you may be able to find a method that works even better for you given your own preferences and methods.

MA_SKAdap

This indicator is very similar to MA_RSIAdap in that it creates an adaptive version of Stochastics using MA_Fractal. The methods used in the case of Stochastics are identical to those described above, so there is no need to go into detail about the mechanics of the adaptation.

What might be of interest is that we have slightly changed the original calculation method for both Stochastics and RSI. Although the changes are subtle, they do seem to make a difference and consequently we included them into the adaptive versions. You can access the new calculator methods without making them adaptive through the functions MA_SK and MA_RSI.

MA_BZONE and MA_SZONE

These are bonus indicators that we have included that have nothing to do with MA_Fractal. They are designed to calculate statistically significant overbought and oversold bands for any oscillator. For example, they can find the value that oscillator X has been above only 10% of the time during the last 70 days.

This is an improvement over the standard practice of using some arbitrary number as the overbought/oversold level since these levels tend to change during trending and non-trending markets. For example, during a prolonged down trend, Stochastics might never rise above 80 to give a sell signal due to the strength of the trend. However, by using this technique, the oversold level will drop to compensate and sell signals can be generated at lower levels more appropriate to current market conditions.

Two user functions have been included which will calculate these levels for you. MA_BZONE will calculate adaptive buy levels while MA_SZONE will calculate adaptive sell levels. You must supply the oscillator(osc) to use, the percentage(perc) you wish to find, and the look back(lkbk) period you wish to use.

A simple demo system called MA_FKTDemo1 has been included which demonstrates how one might use this indicator. This system is not meant to be traded with real money, but is meant as an illustration of how to use MA_BZONE and MA_SZONE. It will buy the S&P500 when SlowK rises above a 15% MA_BZONE band and will exit the market when SlowK falls below a 15% MA_SZONE band. If you apply this system to the S&P, you will find that it has the ability to frequently locate low risk buy levels. Such a technique might be a good starting point for creating a profitable mutual fund switching system.

MA_FTKDemo2

This is a simple system which uses MA_RSIAdap and MA_Fractal together. When MA_Fractal is low, indicating a choppy market, the

system will sell oversold levels of RSI and buy overbought levels. This is the usual method of trading oscillators. When MA_Fractal is high, the system will reverse its logic and sell overbought levels and buy oversold levels. Specifically:

```
When MA_Fractal < 8 then
    Buy if RSI < 30
    Sell if RSI > 70
When MA_Fractal >= 8 then
    Buy if RSI > 70
    Sell if RSI < 30
```

This system does not use stops, and consequently has a high drawdown. It is still valuable as a demonstration system and could be successfully used as an indicator rather than a stand alone trading strategy. Also note that this system will only work in TradeStation and not SuperCharts.

CONTACT INFORMATION

We hope you find your new tools useful and trouble free. If you do have problems or questions, you may contact Erik Been at (303) 494-7613 or may send email to erik@marketanalytics.net. Also, you may wish to check www.marketanalytics.net often to keep ahead of new products or offerings.

Good Trading!

INSTRUCTIONS FOR CREATING SUPERCHARTS INDICATORS

Since the PowerEditor version of our indicators will not work in SuperCharts, users of this program will occasionally need to create their own indicators using the QuickEditor. This is no reason to worry, since compatible indicators can be created from within SuperCharts using the following instructions:

- 1) Start SuperCharts and open the QuickEditor.
- 2) Click the indicator tab to specify that you wish to make an indicator and select "New."
- 3) Name your new indicator. We like to start everything off with "MA_" so that all of our tools are together, but the name is entirely up to you.

- 4) Click the “Inputs” tab and fill in the blanks with the names of the inputs. The appropriate inputs for your function can be found at the front of this manual under the Index of Functions section. Keep the same names to avoid confusion.
- 5) Once the inputs have been specified, click the “Formula” tab and fill in the blank next to Plot1 with the function name including inputs. Copy it as it has been written in the Index of Functions in this manual or use the Function Wizard at the bottom of the screen to select it from the list of available functions.
- 6) If you wish to add other plots, do them now. Buy zones, sell zones, and zero lines are always useful. In the case of MA_Predict, you may also wish to plot the original predicted variable for comparisons sake.
- 7) Next click the “Style” tab and set the colors for each plot.
- 8) After you have set the colors, you should go to scaling and make sure the settings match what you wish to plot. Choose “Screen” if you want the indicator to be separate from the price data. Choose “Same as Price Data” if you want the indicator to be overlaid on top of price as in the case of moving averages.
- 9) Now you should be done. Click the OK button and SuperCharts will verify your study. If there are problems you will be warned.
- 10) Your indicator is complete. Open a chart and click on INSERT-ANALYSIS TECHNIQUES-INDICATORS. Find your indicator and select it to apply it to the chart.

Market Analytics

Fractal Toolkit Manual